

# LINN ENERGY

2130 W. Bender Blvd.Hobbs, NM 88241Phone 575.738.1739

# Hudson Federal #006 (2RP-743)

# Termination Request

Release Date: March 30<sup>th</sup>, 2011

API No. 30-015-29008

Unit Letter I, Section 18, Township 17S, Range 31E

# Rice Environmental Consulting & Safety

P.O. Box 2948, Hobbs, NM 88241 Phone 575.393.2967

March 7<sup>th</sup>, 2014

#### Mike Bratcher

New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau – District 2 811 S. First St. Artesia, NM 88210

> RE: Termination Request Linn Energy – Hudson Federal #006 (2RP-743) UL/I sec. 18 T17S R31E API No. 30-015-26008

Mr. Bratcher:

Linn Energy (Linn) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site.

# **Background and Previous Work**

The site is located approximately 4.5 miles northeast of Loco Hills, New Mexico at UL/I sec. 18 T17S R31E. This site is in an area of no known groundwater.

On March 30<sup>th</sup>, 2011, Linn had a produced water release that occurred when a clamp failed on the Russell Battery transfer line. A total of 100 barrels of produced water was released over 14,833 sq ft of pasture land and lease pad. A vacuum truck was called to the site and recovered 90 barrels of produced water. BLM was notified of the release on March 30<sup>th</sup>, 2011 and NMOCD approved the initial C-141 on April 14<sup>th</sup>, 2011 (Appendix A).

RECS personnel arrived on site on October 15<sup>th</sup>, 2013 to assess the site. Surface samples and samples at a depth of 1 ft bgs were taken at seven points within the release area (Figure 1). The samples were field tested for chlorides and hydrocarbons and the samples were taken to a commercial laboratory for analysis (Appendix B). All samples returned laboratory chloride results less than 250 mg/kg and Gasoline Range Organics (GRO) and BTEX results of non-detect. Diesel Range Organics (DRO) results were slightly elevated but were below regulatory standards.

A Corrective Action Plan (CAP) was submitted to NMOCD and BLM on November 12<sup>th</sup>, 2013. BLM approved the plan on the same day and NMOCD approved the plan on November 19<sup>th</sup>, 2013.

As part of the CAP, the site would be scraped 3-6 inches to remove the asphaltine from the surface of the site. This scraped material will be sent to a NMOCD approved facility for disposal. Clean soil would be imported to the site to backfill the scrape and bring the

site to surface level. The site would be contoured to the surrounding location. The site would then be seeded with a blend of native vegetation. Vegetation provides an infiltration barrier for the site, since plants capture water through their roots thereby reducing the amount of water traveling through the vadose zone to groundwater.

RECS personnel were on site beginning on December 30<sup>th</sup>, 2013. The release was scraped down 6 inches and a total of 296 yards of contaminated soil was taken to a NMOCD approved facility for disposal. A total of 72 yards of caliche and 290 yards of top soil were imported to the site to serve as backfill. A sample of imported soil was taken to a commercial laboratory and returned a chloride result of non-detect (Appendix C). The pasture area was backfilled with the imported soil and the lease road was backfilled with the clean, imported caliche. The site was contoured to the surrounding location. On January 17<sup>th</sup>, 2014, soil amendments were added to the site and the site was seeded with BLM mix #2.

Photo documentation of all activities can be found in Appendix D.

Given that Linn has completed the activities as stated in the NMOCD approved Corrective Action Plan, Linn respectfully requests 'remediation termination' and site closure. The final C-141 will be found in Appendix E.

RECS appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-2967 or me if you have any questions or wish to discuss the site.

Sincerely,

Lara Weinheimer

Project Scientist

**RECS** 

(575) 441-0431

# Attachments:

Figure 1 – Augur Sampling Data

Appendix A – Initial C-141

Appendix B – Initial Sampling Labs

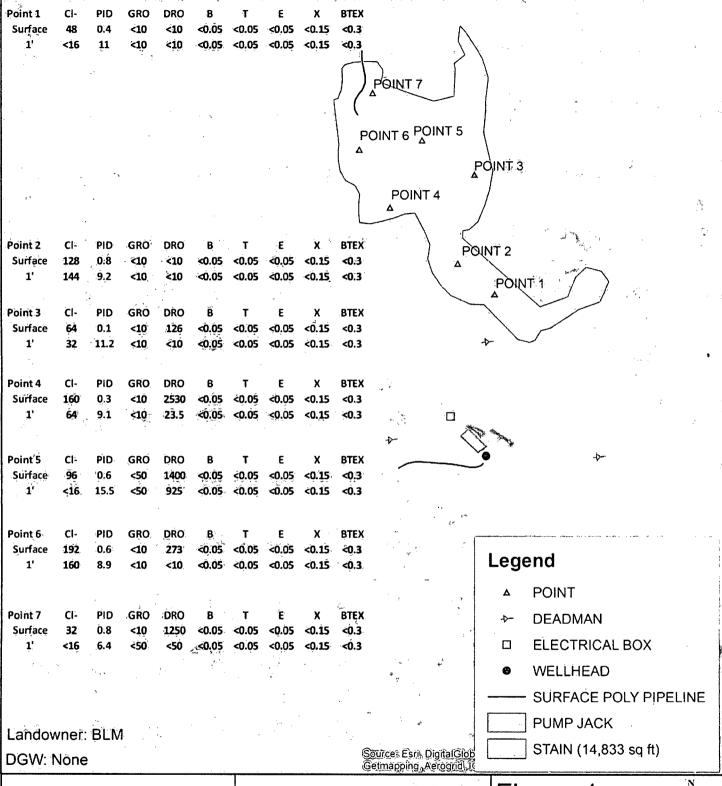
Appendix C – Imported Soil Lab

Appendix D – Photo Documentation

Appendix E – Final C-141

Figures

# **Auger Sampling Data**





# LINN HUDSON FEDERAL #006 2RP-743

LEGALS: UL/I sec. 18 T-17-S R-31-E EDDY COUNTY, NM

# Figure 1



0 40 80 HHH Feet

GPS date: 10/15/13 KS Drawing date: 10/30/13 Drafted by: L. Weinheimer Appendix A
Initial C-141

RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

District 1 J625 N. French Dr.: Hobbs, NM 88240 District II J301 W. Grand Avenjie, Ariesia, NM 88210 District III 1000 Rio Brazos Road; Aziec, NM 87410

1220 S. St. Prageis Dr., Santa Fe, NW 87505

# State of New Mexico Energy Minerals and Natural Resources

APR **1,3** 2011

Form C-141 sed October 10, 2003

side of form

NMOCD ARTERIA

RECEIVED

umha Peoples to appropriate District Office in accordance with Rule 116 on back

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

Release Notification and Corrective Action OPERATOR. X Initial Report Final Report NG-111.0431190 Name of Company Linn Energy Contact Dennis Potter Address PO Box 69, Loco Hills; NM; 88255-Telephone No. 575 677 2327 Facility Type Injection Well-Facility Name Hudson Federal #06. Mineral Owner BLM Lease No. NMLC054908 Surface Owner BLM. API.30-015-26008 LOCATION OF RELEASE Township: Feet from the North/South Line Feet from the East/West-Line ·County Unif Letter Section Range. 41 18 175 SIL Eddy (Latitude N32:8343(Longitude/W103,9040 (at clamp in tin horn) NATURE OF RELEASE Villing of Release 100bbls Water Type of Release: Produced Water Volume Recovered 90bbls Water Source of Release Produced Water Line Date and Hour of Occurrence Date and Hour of Discovery 30Marl 1 1100 30Mar11 1100hrs Torry Gregston-BLM Emmediate Hoth fican Was Jinnedjale Notice Civen? \*No. [ ] Not Required. X' Yes ## O By Whom? Dennis Potter, Date and Hour 30Mar I.I. 1500his Was a Watercourse Reached? If YES: Volume-Impacting the Watercourse. TYCS X NO N/A If a Watercourse was Impacred; Describe Fully: Describe Cause of Problem and Remedial Action Taken? The release was the result of a climp initiated in the Russell Battery Transfer Line. A year track was immediately called antitoristic for accurating all free. sanding liquid. W back hoe was used forbuild an carthern dike in order to reduce spreading of water. The affected area is approximately 20 x 300 of he area will be delineated and a work planawill be submitted to NMOCD and BLM for review and approval. Describe Area Affected and Cleanup Action Taken.\* Uhereby certify that the information given phove is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or till corrain release notifications and perform corrective actions for releases which may endanger igoblic health or the environment. The neceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate explaintination that pose a threat to ground water, surface water, human health. .orahe environment. In addition, NMOCO acceptance of a C-141 report does hot relieve the operator of responsibility for compliance with impother-federal, saite, or total large unifor regulations. OIL CONSERVATION DIVISION Signature Approved by Disligned By Printed Name: Dennis Poller. Approval Date: A Title: Assistint Production Foreman Expiration Date: demail Address: dpotter@linnenergy.com Conditions of Approvala 🗋 bádaanÁ, Remediation per OCD Rules & Pháire? 505 206 7673! Dates, 13 April 1 Guidelines. SUBMIT REMEDIATION Attach Additional Sheets If Necessary PROPOSAL NOT LATER THAN:

Appendix B Initial Sampling Labs



October 29, 2013

JACOB KAMPLAIN
RICE ENVIRONMENTAL CONSULTING & SAFETY LLC
419 W. CAIN
HOBBS, NM 88240

RE: HUDSON FEDERAL #006 2RP-743

Enclosed are the results of analyses for samples received by the laboratory on 10/25/13 16:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accred certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2 Haloacetic Acids (HAA-5)
Method EPA 524.2 Total Trihalomethanes (TTHM)
Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celeg D. Keene

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To: (575) 397-1471

Received:

10/25/2013

Sampling Date:

10/15/2013

Reported:

10/29/2013

Sampling Type:

Soil

Project Name:

HUDSON FEDERAL #006 2RP-743

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Complete Described De

COOL & IIIIac

Project Location:

NOT GIVEN

Sample Received By:

Jodi Henson

# Sample ID: POINT 1 @ SURFACE (H302604-01)

BTEX 8021B	mg/kg		Analyze	d By: MS			·		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/28/2013	ND	2.16	108	2.00	2.91	
Toluene*	<0.050	0.050	10/28/2013	ND	2.20	110	2.00	2.57	
Ethylbenzene*	<0.050	0.050	10/28/2013	ND	2.21	110	2.00	2.96	
Total Xylenes*	<0.150	0.150	10/28/2013	ND	6.39	106	6.00	3.57	
Total BTEX	<0.300	0.300	10/28/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	104 %	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP				·	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/29/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/29/2013	ND	197	98.6	200	2.61	
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	188	94.1	200	1.30	
Surrogate: 1-Chlorooctane	82.2	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	84.15	% 63.6-15	4						

Cardinal Laboratories \*=Accredited Analyte

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



RICE ENVIRONMENTAL CONSULTING & SAFETY
JACOB KAMPLAIN
419 W. CAIN
HOBBS NM, 88240

Fax To:

(575) 397-1471

Received:

10/25/2013

Sampling Date:

10/15/2013

Reported:

10/29/2013

Sampling Type:

Soil

Project Name:

HUDSON FEDERAL #006 2RP-743

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

# Sample ID: POINT 2 @ SURFACE (H302604-02)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/28/2013	ND	2.16	108	2.00	2.91	
Toluene*	<0.050	0.050	10/28/2013	ND	2.20	110	2.00	2.57	
Ethylbenzene*	<0.050	0.050	10/28/2013	ND	2.21	110	2.00	2.96	
Total Xylenes*	<0.150	0.150	10/28/2013	ND	6.39	106	6.00	3.57	
Total BTEX	<0.300	0.300	10/28/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	104	% 89.4-12	6						
Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	10/29/2013	ND	400	100	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/29/2013	ND	197	98.6	200	2.61	
DRO >C10-C28	<10.0	10.0	10/29/2013	ND	188	94.1	200	1.30	
Surrogate: 1-Chlorooctane	88.9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	92.3	% 63.6-15	4						

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\*=Accredited Analyte

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Celey D. Keine



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Fax To:

Received:

10/25/2013

Sampling Date:

10/15/2013

Reported:

10/29/2013

Sampling Type:

Soil

Project Name:

HUDSON FEDERAL #006 2RP-743

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

Sample ID: POINT 3 @ SURFACE (H302604-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS			•		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/28/2013	ND	2.16	108	2.00	2.91	
Toluene*	<0.050	0.050	10/28/2013	ND	2.20	110	2.00	2.57	
Ethylbenzene*	<0.050	0.050	10/28/2013	ND	2.21	110	2.00	2.96	
Total Xylenes*	<0.150	0.150	10/28/2013	ND	6.39	106	6.00	3.57	
Total BTEX	<0.300	0.300	10/28/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	105 9	% 89.4-12	б						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	10/29/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/29/2013	ND	197	98.6	200	2.61	
DRO >C10-C28	126	10.0	10/29/2013	ND	188	94.1	200	1.30	
Surrogate: 1-Chlorooctane	102 5	% 65.2-14	0			-		·	
Surrogate: 1-Chlorooctadecane	113 9	% 63.6-15	4						

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Celeg D. Keine



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To:

(575) 397-1471

Received:

10/25/2013

Sampling Date:

10/15/2013

Reported:

10/29/2013

Sampling Type:

Soil

Project Name:

HUDSON FEDERAL #006 2RP-743

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

Sample ID: POINT 4 @ SURFACE (H302604-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/29/2013	ND	2.16	108	2.00	2.91	
Toluene*	< 0.050	0.050	10/29/2013	ND	2.20	110	2.00	2.57	
Ethylbenzene*	<0.050	0.050	10/29/2013	ND	2.21	110	2.00	2.96	
Total Xylenes*	<0.150	0.150	10/29/2013	ND	6.39	106	6.00	3.57	
Total BTEX	<0.300	0.300	10/29/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	103 9	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	10/29/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<100	100	10/29/2013	ND	197	98.6	200	2.61	
DRO >C10-C28	2530	100	10/29/2013	ND	188	94.1	200	1.30	
Surrogate: 1-Chlorooctane	100 5	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	374	63.6-15	4						

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Celey D. Kune



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To:

(575) 397-1471

Received:

10/25/2013

Sampling Date:

10/15/2013

Reported:

10/29/2013

Sampling Type:

Soil

Project Name:

HUDSON FEDERAL #006 2RP-743

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Project Location:

NOT GIVEN

Sample Received By:

Jodi Henson

# Sample ID: POINT 5 @ SURFACE (H302604-05)

BTEX 8021B	mg/	kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/29/2013	ND	2.16	108	2.00	2.91	
Toluene*	< 0.050	0.050	10/29/2013	ND	2.20	110	2.00	2.57	
Ethylbenzene*	< 0.050	0.050	10/29/2013	ND	2.21	110	2.00	2.96	
Total Xylenes*	< 0.150	0.150	10/29/2013	ND	6.39	106	6.00	3.57	
Total BTEX	<0.300	0.300	10/29/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	105 %	6 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	10/29/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	10/29/2013	ND	197	98.6	200	2.61	
DRO >C10-C28	1400	50.0	10/29/2013	ND	188	94.1	200	1.30	
Surrogate: 1-Chlorooctane	89.8 9	65.2-14	0						
Surrogate: 1-Chlorooctadecane	211 9	63.6-15	4						

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To: (575) 397-1471

Received:

10/25/2013

Sampling Date:

10/15/2013

Reported:

10/29/2013

Sampling Type:

Soil

Project Name:

HUDSON FEDERAL #006 2RP-743

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Project Location:

NOT GIVEN

Sample Received By:

Jodi Henson

# Sample ID: POINT 6 @ SURFACE (H302604-06)

BTEX 8021B	mg/	kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/29/2013	ND	2.16	108	2.00	2.91	
Toluene*	<0.050	0.050	10/29/2013	ND	2.20	110	2.00	2.57	
Ethylbenzene*	<0.050	0.050	10/29/2013	ND	2,21	110	2.00	2.96	
Total Xylenes*	<0.150	0.150	10/29/2013	ND	6.39	106	6.00	3.57	
Total BTEX	<0.300	0.300	10/29/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIE	104 %	% 89.4-120	5						
Chloride, SM4500Cl-B	mg/	'kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	10/29/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/29/2013	ND	210	105	200	1.98	
DRO >C10-C28	273	10.0	10/29/2013	ND	202	101	200	1.03	
Surrogate: 1-Chlorooctane	104 9	% 65.2-140	0						
Surrogate: 1-Chlorooctadecane	127 9	% 63.6-15-							

# Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsbewer shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after competion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keine



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To: (575) 397-1471

Received:

10/25/2013

Sampling Date:

10/15/2013

Reported:

Sampling Type:

Soil

10/29/2013

Sampling Condition:

Cool & Intact

Project Name: Project Number: HUDSON FEDERAL #006 2RP-743 NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

Sample ID: POINT 7 @ SURFACE (H302604-07)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/29/2013	ND	2.16	108	2.00	2.91	
Toluene*	<0.050	0.050	10/29/2013	ND	2.20	110	2.00	2.57	
Ethylbenzene*	<0.050	0.050	10/29/2013	ND	2.21	110	2.00	2.96	
Total Xylenes*	< 0.150	0.150	10/29/2013	ND	6.39	106	6.00	3.57	
Total BTEX	<0.300	0.300	10/29/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIE	104 %	6 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/29/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/29/2013	ND	210	105	200	1.98	
DRO >C10-C28	1250	10.0	10/29/2013	ND	202	101	200	1.03	
Surrogate: 1-Chlorooctane	102 %	65.2-14	0						
Surrogate: 1-Chlorooctadecane	137 9	63.6-15	4						

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



## **Notes and Definitions**

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

\*\* Samples not received at proper temperature of 6°C or below.

\*\*\* Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

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Celeg D. Keine

# ARDINAL LABORATORIES

# **CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name	RECS				1	BI	LL 70						ANAL	YSIS	RE	QUE	ST			•
Project Manage	Tacob Kamplain			·	P	O. #:		· ·												
Address:					Co	ompany:							S			,				
City: Hobbs	State: NM	Zip:	882	240	At	itn:							Cations/Anions							
Phone #:	Fax #:				Ac	ddress:				}			λnί							
Project #:	Project Owner	er:		·	Ci	ty:			,,	Σ		エ	1/8				,			. 1
Project Name:					St	ate:	Zip:		ě	15	×	TPH	Ö							
Project Location	1: Hudson Federal #006				PF	none #:			Chlorides	801	BTEX	່ເ	äţi	DS						
Sampler Name:	Kyle Schnaidt				Fa	ax #:			1≓	1	B	exas		<b>-</b>					1	
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER WASTEWATER SOIL OIL XILLOGE XILLOGE	OTHER:	ACID/BASE: 32 ICE / COOL MAIN MAIN MAIN MAIN MAIN MAIN MAIN MAIN	SAMPL DATE	TIME	O	TPH	-	Te	Complete							
1.	Point 1@ Surface	G	1	X	1	X .	16-15-13	2:30	X	X	X									
	Point 2 @ Surface	6	1	) k	<u> </u>	]  X		2:35	J.X	1	X				ļ		<u> </u>			
3	Point3 @ Surface	6	4	X		AX .		2:40	X	2	X	ļ		<u> </u>					·	and the
	Pointy @ Surface	6	1	X		X	$\overline{}$	2:45	13	X	V	1		ļ						
	Poin+5 @ Sorface	6	4	8		X	<del></del>	2:56	<del>  X</del>	X	X	<del> </del>		<u> </u>			ļ		77.5	
9	Point & @ Surface	6	-	X	+-	a	<del>- /-</del>	2:55	X   X	X	X			<u> </u>	-					i
<del>-</del>	Point / @ Surface	6	↤	- X	+	<u> </u>		3.00	<del> ~</del>	1	X		<u> </u>		-			ļ		
-		+	$\dashv$		+-	1	<u> </u>		1						-			-		
		_			+				1							-				
analyses. All claims including service. In no event shall C	nd Damages. Cardinal's liability and client's exclusive remedy for ing those for negligence and any other cause whatsoever shall be ardinal be liable for incidental or consequental damages, including out of or related to the performance of services bereunder by	e deemed ng wilhout Cardinal,	waived iimitati regardi	f unless made in writing ion, business interruption less of whether such clai	and reci is, loss	eived by Cardinal v of use, or loss of p	within 30 days aft rofits incurred by	er completion of t client, its subsidi	lhe applica arles, ise,	able .					<b>-</b>		V.	<u> </u>		

Relinquished By:	Date:	Received By:		Phone Result:	
K. L. Schnaidt	TURD	godi sel	Won	Fax Result:	
Relinquished By:	Date:	Received By:		kschnaidt@rice-ecs.com	
	Time:	_		Knorman@rice-ecs.com	
Delivered By: (Circle One)		Sample Condition Cool Intact		Kjones@riceswd.com; jkamplain@rice-ecs.com	
Sampler - UPS - Bus - Other:	· ·	□ Yes □ Yes	(Initial)	hconder@rice-ecs.com; Lweinheimer@rice-ecs.com	m

<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476





October 23, 2013

JACOB KAMPLAIN
RICE ENVIRONMENTAL CONSULTING & SAFETY LLC
419 W. CAIN
HOBBS, NM 88240

RE: HUDSON FEDERAL #006 2RP-743

Enclosed are the results of analyses for samples received by the laboratory on 10/18/13 15:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.qov/field/ga/lab">www.tceq.texas.qov/field/ga/lab</a> accred certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celey & Keene

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To: (575) 397-1471

Received:

10/18/2013

Sampling Date:

10/18/2013

Reported:

10/23/2013

Sampling Type:

Soil

Project Name:

HUDSON FEDERAL #006 2RP-743

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

# Sample ID: PT. 1 1' (H302532-01)

BTEX 8021B	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPĎ	Qualifier
Benzene*	<0.050	0.050	10/22/2013	, ND	2.14	107	2.00	0.577	
Toluene*	<0.050	0.050	10/22/2013	ND	2.14	107	2.00	0.813	
Ethylbenzene*	<0.050	0.050	10/22/2013	ND	2.16	108	2.00	0.211	
Total Xylenes*	<0.150	0.150	10/22/2013	ND	6.37	106	6.00	0.365	
Total BTEX	<0.300	0.300	10/22/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	99.9	% 89.4-12	6	•				1	
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/21/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/22/2013	ND	200	99.9	200	3.36	
DRO >C10-C28	<10.0	10.0	10/22/2013	ND	192	95.9	200	2.97	
Surrogate: 1-Chlorooctane	116 %	6 65.2-14	0	***					
Surrogate: 1-Chlorooctadecane	125 %	63.6-15	4						

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\*=Accredited Analyte

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Celeg D. Keine



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To:

(575) 397-1471

Received:

10/18/2013

Sampling Date:

10/18/2013

Reported:

10/23/2013

Sampling Type:

Soil

Project Name:

HUDSON FEDERAL #006 2RP-743

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

**NOT GIVEN** 

Sample ID: PT. 2 1' (H302532-02)

BTEX 8021B	mg/kg		Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/22/2013	ND	2.14	107	2.00	0.577	
Toluene*	<0.050	0.050	10/22/2013	ND	2.14	107	2.00	0.813	
Ethylbenzene*	<0.050	0.050	10/22/2013	ND	2.16	108	2.00	0.211	
Total Xylenes*	<0.150	0.150	10/22/2013	ND	6.37	106	6.00	0.365	
Total BTEX	<0.300	0.300	10/22/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	102 9	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BŞ	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	10/21/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS				· · · · · · · · · · · · · · · · · · ·	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/22/2013	ND	200	99.9	200	3.36	
DRO >C10-C28	<10.0	10.0	10/22/2013	ND	192	95.9	200	2.97	
Surrogate: 1-Chlorooctane	126 9	65.2-14	o						
Surrogate: 1-Chlorooctadecane	138 9	% 63.6-15	4						

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\*=Accredited Analyte

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Celeg D. Keine



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To: (575) 397-1471

Received:

10/18/2013

Sampling Date:

10/18/2013

Reported:

10/23/2013

Sampling Type:

Soil

Project Name:

HUDSON FEDERAL #006 2RP-743

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

# Sample ID: PT. 3 1' (H302532-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/22/2013	ND	2.14	107	2.00	0.577	
Toluene*	<0.050	0.050	10/22/2013	ND	2.14	107	2.00	0.813	
Ethylbenzene*	<0.050	0.050	10/22/2013	ND	2.16	108	2.00	0.211	
Total Xylenes*	<0.150	0.150	10/22/2013	- ND	6.37	106	6.00	0.365	
Total BTEX	<0.300	0.300	10/22/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	103 9	6 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/21/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/22/2013	ND	200	99.9	200	3.36	
DRO >C10-C28	<10.0	10.0	10/22/2013	ND	192	95.9	200	2.97	
Surrogate: 1-Chlorooctane	93.7	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	105 9	63.6-15	4						

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Celey D. Keine



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To:

(575) 397-1471

Received:

10/18/2013

Sampling Date:

10/18/2013

Reported:

10/23/2013

Sampling Type:

Soil

Project Name:

Sampling Condition:

Cool & Intact

Project Number:

HUDSON FEDERAL #006 2RP-743 NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

Sample ID: PT. 4 1' (H302532-04)

BTEX 8021B	mg/	kg .	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050 0.050		10/22/2013	/22/2013 ND		107	2.00	0.577	
Toluene*	< 0.050	0.050	10/22/2013	ND	2.14	107	2.00	0.813	
Ethylbenzene*	< 0.050	0.050	10/22/2013	ND	2.16	108	2.00	0.211	
Total Xylenes*	< 0.150	0.150	10/22/2013	ND	6.37	106	6.00	0.365	
Total BTEX	<0.300	0.300	10/22/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIE	102 %	% 89.4-12	6						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result Reporting Limit		Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>64.0</b> 16.0		10/21/2013 ND		400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS		_			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/22/2013	ND	200	99.9	200	3.36	
DRO >C10-C28	23.5	10.0	10/22/2013	ND	192	95.9	200	2.97	
Surrogate: 1-Chlorooctane	105 9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	118 %	63.6-15	4			•			

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\*=Accredited Analyte

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Celego Keena



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To: (575) 397-1471

Received:

10/18/2013

Sampling Date:

10/18/2013

Reported:

10/23/2013

Sampling Type:

Soil

Project Name:

HUDSON FEDERAL #006 2RP-743

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Project Location:

NOT GIVEN

Sample Received By:

Jodi Henson

# Sample ID: PT. 5 1' (H302532-05)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050 0.050		10/22/2013	10/22/2013 ND		107	2.00	0.577	
Toluene*	< 0.050	0.050	10/22/2013	ND	2.14	107	2.00	0.813	
Ethylbenzene*	< 0.050	0.050	10/22/2013	ND	2.16	108	2.00	0.211	
Total Xylenes*	<0.150	0.150	10/22/2013	ND	6.37	106	6.00	0.365	
Total BTEX	<0.300	0.300	10/22/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIE	100 %	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/21/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	10/22/2013	ND	200	99.9	200	3.36	
DRO >C10-C28	925	50.0	10/22/2013	ND	192	95.9	200	2.97	
Surrogate: 1-Chlorooctane	73.8 5	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	184 9	63.6-15	4						

# Cardinal Laboratories

\*=Accredited Analyte

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Celeg D. Keena

Celey D. Keene, Lab Director/Quality Manager



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240 (575) 397-1471

Fax To:

Received:

10/18/2013

Sampling Date:

10/18/2013

Reported:

10/23/2013

Sampling Type:

Soil

Project Name:

HUDSON FEDERAL #006 2RP-743

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

Sample ID: PT. 6 1' (H302532-06)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050 0.050		10/22/2013	ND	2.14	107	2.00	0.577	
Toluene*	<0.050	0.050	10/22/2013	ND	2.14	107	2.00	0.813	
Ethylbenzene*	<0.050 0.050		10/22/2013	ND	2.16	108	2.00	0.211	
Total Xylenes*	<0.150 0.150		10/22/2013	ND	6.37	106	6.00	0.365	
Total BTEX	<0.300	0.300	10/22/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	100 %	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result Reporting Limit		Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>160</b> 16.0		10/21/2013 ND		400	100	400	3.92	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0 10.0		10/22/2013	ND	200	99.9	200	3.36	
DRO >C10-C28	<10.0	10.0	10/22/2013	ND	192	95.9	200	2.97	
Surrogate: 1-Chlorooctane	96.1	% 65.2-14	o o						***************************************
Surrogate: 1-Chlorooctadecane	106 %	63.6-15	4						

Cardinal Laboratories

\*=Accredited Analyte

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Celeg D. Keene



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To:

(575) 397-1471

Received:

10/18/2013

Sampling Date:

10/18/2013

Reported:

10/23/2013

Sampling Type:

Soil

Project Name:

HUDSON FEDERAL #006 2RP-743

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

NOT GIVEN

Sample ID: PT. 7 1' (H302532-07)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050 0.050		10/22/2013	ND	2.14	107	2.00	0.577	
Toluene*	<0.050	0.050	10/22/2013	ND	2.14	107	2.00	0.813	
Ethylbenzene*	<0.050 0.050		10/22/2013	ND	2.16	108	2.00	0.211	
Total Xylenes*	<0.150 0.150		10/22/2013	/22/2013 ND		106	6.00	0.365	
Total BTEX	<0.300	0.300	10/22/2013	ND					
Surrogate: 4-Bromofluorobenzene (PIL	100 9	% 89.4-12	6						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP		<u> </u>			
Analyte	Result Reporting Limit		Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0 16.0		10/21/2013	ND	400	100	400	3.92	
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0 50.0		10/22/2013	ND	200	99.9	200	3.36	
DRO >C10-C28	<50.0	50.0	10/22/2013	ND	192	95.9	200	2.97	
Surrogate: 1-Chlorooctane	96.4	% 65.2-14	0	124,00			1-300-00		
Surrogate: 1-Chlorooctadecane	<u> </u>								

# Cardinal Laboratories

\*=Accredited Analyte

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Celeg D. Keine



# **Notes and Definitions**

S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

\*\* Samples not received at proper temperature of 6°C or below.

\*\*\*

Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories \*=Accredited Analyte

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Celey D. Keene



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Mariand, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name	RECS	BILL TO ANALYSIS REQUEST																
Project Manage		_		P.O. #:	1.													
Address:				Company:							-			1				l
City:	State:	Zip:		Attn:														l
Phone #:	Fax #:		·	Address:						-		٠.		1.				
Project #:	Project Owne	r:	·	City:								٠ .						
Project Name:			<u> </u>	State:	Zip:									ŀ	İ			
Project Locatio	n: HUDSON FEDERAL \$006	LRP-	743	Phone #:	ŧΣ													
Sampler Name: EDWARD CESAREO					Fax #:									1				
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP. # CONTAINERS	GROUNDWATER WASTEWATER SOIL OIL SLUDGE	OTHER: ACID/BASE: BAICE / COOL BAICE / COOL COTHER: ACID/BASE		TIME	CHLORIDE	HOL	X3L8	-	;·							
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PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without interaction, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates of successors appling out of or related to the performance of services hereunder by Cardinal, integratiless of whether such claim is based upon any of the above stated reasons or otherwise.

	Relinquished By:	Time: 3:50 pm WWW MWDN	Phone Result:         □ Yes         □ No         Add'l Phone #:           Fax Result:         □ Yes         □ No         Add'l Fax #:           REMARKS:         □ No         Add'l Fax #:
_	Relinquished By:	Date: Received By: Time:	Jkamplain a rice-ecs.com honder a ricesudicom
	Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition CHECKSD BY: Cool Intact Intrals Ares Ares No No	lweinheimer orice-ecs.com

<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to (575), 393-2326

Appendix C Imported Soil Lab



February 13, 2014

JACOB KAMPLAIN
RICE ENVIRONMENTAL CONSULTING & SAFETY LLC
419 W. CAIN
HOBBS, NM 88240

RE: HUDSON FEDERAL #006 2RP-743

Enclosed are the results of analyses for samples received by the laboratory on 01/28/14 16:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accred certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celeg D. Keine

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



RICE ENVIRONMENTAL CONSULTING & SAFETY JACOB KAMPLAIN 419 W. CAIN HOBBS NM, 88240

Fax To:

(575) 397-1471

Received:

01/28/2014

Sampling Date:

01/28/2014

Reported:

02/13/2014

Sampling Type:

Soil

Project Name:

HUDSON FEDERAL #006 2RP-743

Sampling Condition:

Cool & Intact

Project Number: Project Location:

NONE GIVEN NOT GIVEN Sample Received By:

Jodi Henson

# Sample ID: 5 PT. COMP IMPORTED SOIL (H400271-01)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/03/2014	ND	416	104	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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Celeg D. Keine



#### **Notes and Definitions**

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

\*\* Samples not received at proper temperature of 6°C or below.

\*\*\* Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories \*=Accredited Analyte

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Celey D. Kuna

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

# ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name	RECS				-	•			je.	B	1667	O.	多。这一					ANA	YSIS	S RE	QUE	ST			
Project Manage	Jacob Kamplain							P.O	#:		£-													-	1
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1.	- Buss- Otlièr:				Cool	int es •	ZCI/	s.		À	护		hounder@rice-ecs.com; Lweinheimer@rice-ecs.com				.com								
Campion - One					Πı	lo Ĉ	Ĩ No	0	1	Щ	N.		L*< (	LAG	neil	<u>u</u> 0	50	2	)ac	<u>d.</u>		10	114		

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-476

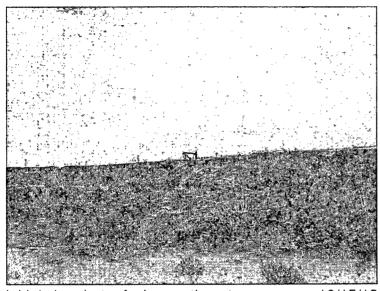


Appendix D
Photo Documentation

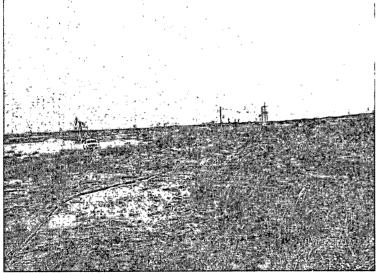
RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

# Linn Hudson Federal #006

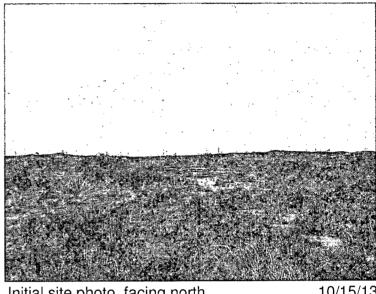
Unit Letter I, Section 18, T17S, R31E



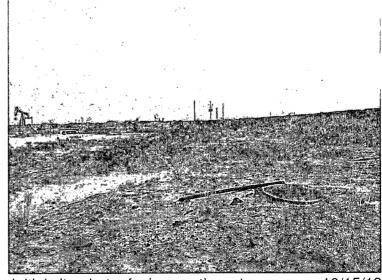
10/15/13 Initial site photo, facing northeast



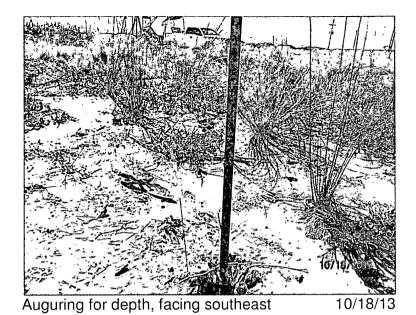
Initial site photo, facing south 10/15/13



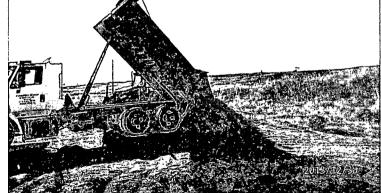
10/15/13 Initial site photo, facing north



Initial site photo, facing southwest 10/15/13

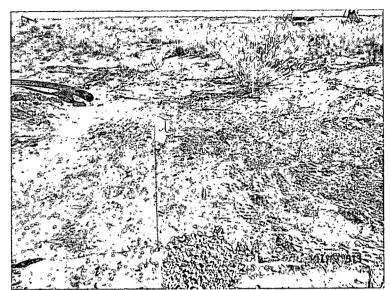




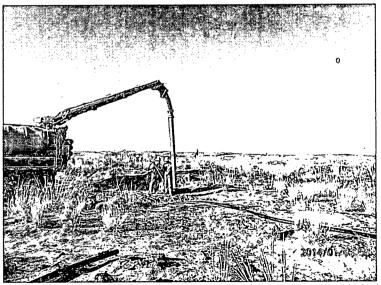


Importing caliche, facing south

12/30/13

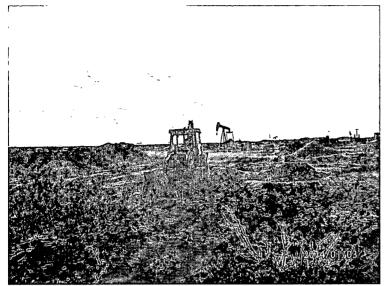


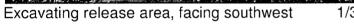
Plugging augur point in total with bentonite, facing southeast 10/18/13

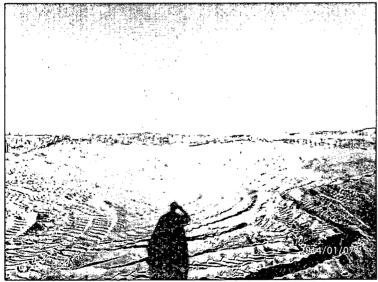


Spotting lines with the hydrovac, facing west

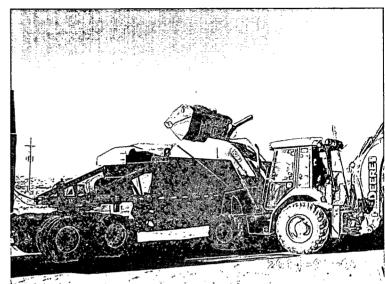
1/2/14





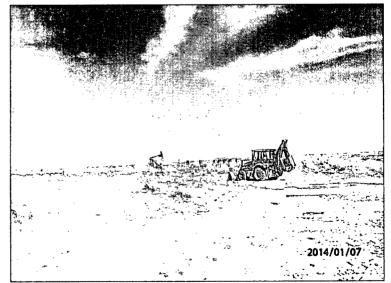


Scrape completed, facing north



Exporting soil, facing southwest

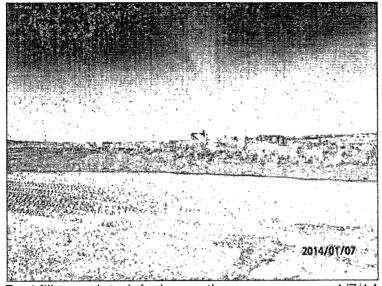
1/6/14

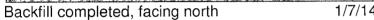


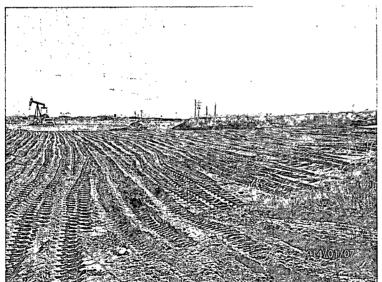
Backfilling site, facing northeast

1/7/14

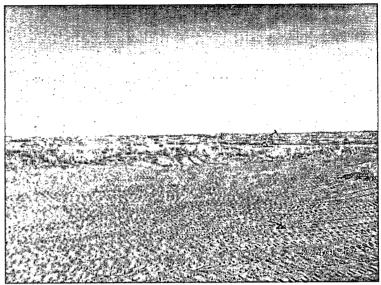
1/7/14



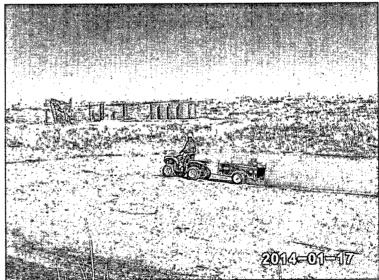




Backfill completed, facing south 1/7/14



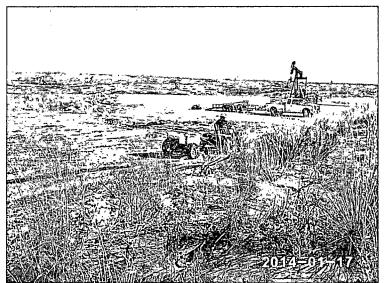
Backfill completed, facing northeast



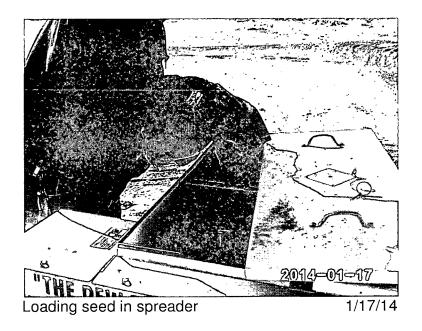
Applying soil amendments, facing northeast 1/17



Tilling in amendments, facing northwest 1/17/14



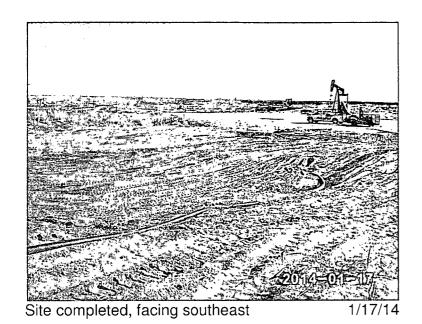
Seeding site, facing southeast 1/17/14

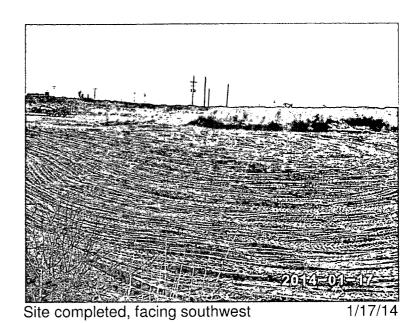




Site completed, facing northwest

1/17/14





Appendix E Final C-141

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., Artesia, NM 88210 District III
1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

\* Attach Additional Sheets If Necessary

State of New Mexico MAR 13 2014 Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Oil Conservation Division MOCD Anti-Control appropriate District Office in accordance with 19.15.29 NMAC. 1220 South St. Francis Dr.

Santa Fe, NM 87505

			Rele	ease Notifica	ation	and Co	rrective A	ction							
						OPERATOR									
Name of Co	mpany Li	inn Energy				Contact Brian Wall									
		nder Blvd., E		M 88240			lo. (806) 367-0								
Facility Nar	ne Hudso	n Federal #0	6		F	Facility Typ	e Injection we	11							
Surface Ow	ner BLM			Mineral Ov	wner ]	er BLM API No. 30-015-26008									
		,				ON OF RELEASE									
Unit Letter	Section	Township	Range	Feet from the	North/S	South Line	Feet from the	East/West Line	t/West Line   County						
Н	18	17S	31E						Eddy						
		L	atitude _	N 32.8343 L	ongitu	de <u>W 103.</u>	9040 (at clamp	in tin horn)							
<b>v</b>	Type of Release Produced Water Volume of Release 100 bbls Volume Recovered 90 bbls Water														
Type of Rele	ase Produ	ced Water				Volume of Water	Release 100 bbl	s Volume I	Recovered 90	bbls Water					
Source of Re	lease Prod	luced Water L	ine			1	lour of Occurrence	Date and	Hour of Disco	overy 30Mar11					
Was Immedi	ate Notice (		Yes [	No □ Not Rec	quired	If YES, To									
By Whom?	Dennis Pott	er				Date and H	lour 30Mar11	1500hrs							
Was a Water		ched?					lume Impacting t								
		<u></u>													
If a Watercourse was Impacted, Describe Fully.*															
The release v	Describe Cause of Problem and Remedial Action Taken.*  The release was the result of a clamp failure on the Russell Battery Transfer Line. A vac truck was immediately called and on site to vac up all free standing liquid. A back hoe was used to build an earthen dike in order to reduce spreading of water.														
Describe Area Affected and Cleanup Action Taken.* The release covered 14,833 sq ft of pasture land and lease pad. RECS personnel arrived on site on October 15 <sup>th</sup> , 2013 to assess the site. Surface samples and samples at a depth of 1 ft bgs were taken at seven points within the release area. The samples were field tested for chlorides and hydrocarbons and the samples were taken to a commercial laboratory for analysis. All samples returned laboratory chloride results less than 250 mg/kg and Gasoline Range Organics (GRO) and BTEX results of non-detect. Diesel Range Organics (DRO) results were slightly elevated but were below regulatory standards. A Corrective Action Plan (CAP) was submitted to NMOCD and BLM on November 12 <sup>th</sup> , 2013. BLM approved the plan on the same day and NMOCD approved the plan on November 19 <sup>th</sup> , 2013. RECS personnel were on site beginning on December 30 <sup>th</sup> , 2013. The release was scraped down 6 inches and a total of 296 yards of contaminated soil was taken to a NMOCD approved facility for disposal. A total of 72 yards of caliche and 290 yards of top soil were imported to the site to serve as backfill. A sample of imported soil was taken to a commercial laboratory and returned a chloride result of non-detect. The pasture area was backfilled with the imported soil and the lease road was backfilled with the clean, imported caliche. The site was contoured to the surrounding location. On January 17 <sup>th</sup> , 2014, soil amendments were added to the site and the site was seeded with BLM mix #2.  I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger															
should their or the enviro	operations h nment. In a	nave failed to	adequately OCD acce	ce of a C-141 report y investigate and re ptance of a C-141 re	mediate	e contaminati	on that pose a three the operator of	eat to ground wate responsibility for c	r, surface wate ompliance wi	er, human health th any other					
_	- ,-	1 . //					OIL CON	<u>SERVATION</u>	DIVISIO	<u>N</u>					
Signature:	Signature: Fred B Wall														
Printed Name	e: Brian W	all				Approved by Environmental Specialist:									
Title: Consti	ruction Fore	eman II			Approval Date: Expiration Date:										
E-mail Addre	ess: Bwall	@linnenergy.c	om			Conditions o	f Approval:		Attached						
Date: 3/7/	14		Phone	: (806) 367-0645											